

Mr. Richard B. Walsh, Jr.
November 7, 1997
Page 12

objection to Claim 8 that is applied to Claim 7. The same comments herein that apply to Claim 7 apply to Claim 8.

8. Claim 9.

Claim 9 depends from Claim 1 and adds the element that the cam means must compensate for chain gap variations in the derailleur shifting means. Mr. Berto concludes that Claim 9 is invalid because all prior index shifting devices that operate with the derailleurs must compensate for chain gap variations. Contrary to Mr. Berto's statement, Claim 9 is valid. Mr. Berto ignores the simple fact that the manner in which the system described in the '291 Patent compensates for chain gap variations is different than any prior invention. In the invention of the '291 Patent, there is a specific amount of overtravel designed into the cam profile for each destination sprocket. Because of the invention, there is a unique ability to make that overtravel different, not uniform, for each destination sprocket. The amount of movement required as the chain goes from a higher to a lower gear is programmed right into the cam. The rider need not know anything about the position of the chain, or the chain gap variation between the derailleur and the destination sprocket. He need only turn the shift actuator. In each of the prior references cited by Mr. Berto, none of the twisting devices have any ability to account for chain gap variations.

9. Claim 10.

Claim 10 depends from Claim 1 and describes the shifter with the cam configured so as to cause rear derailleur overshifting in downshifting events. Claim 10 is valid. Once again, Mr. Berto ignore the fact that the key is the manner in which the rider effectuates the overshift. In the invention of the '291 Patent, as indicated above, the specific amount of overtravel is designed into the cam profile for each destination sprocket. Likewise, the amount of overtravel required for each shift is similarly programmed. The invention has the unique ability to make that overtravel different for each destination sprocket.

This is very unlike the Japanese Reference No. JP44-26571 "Utility Model Publication," attached to the Berto declaration as Exhibit B. ("JUMP"). That invention is very different from the invention of the '291 Patent. There, the publication describes a simple spool device with very low mechanical advantage. The device

SRAM/AD-II
000012
DD-18245

SR291-002210

Mr. Richard B. Walsh, Jr.
November 7, 1997
Page 13

has the same amount of overshift built into every shifting movement, unlike the '291 Patent. In the JUMP, slop is built into the system. This can be seen in Figure 3 of the JUMP. A cylinder (26) sits in a cavity, and when a shift is accomplished the cylinder will move freely in the cavity which will allow the cable to slacken as the cylinder moves in the cavity. This allows slack in the cable line coming from the actuator after the shift, so that the chain may fall back onto the destination sprocket. The "slop" built into the system to allow the overshifting is inherently precise and is fundamentally different from the '291 Patent. In the '291 device, the overtravel is built into the cam profile and is exactly equal to the difference between the peak valley on the cam. Moreover, the invention of the '291 can account for variable overshift when the device described in the JUMP cannot.

Berto also cites U.S. Patent No. 4,186,643 to Nagano, Berto Exhibit CC, stating that "it was well known to overshift a chain to compensate for chain gap variations." This statement can only be described as misleading in the context of this patent. The '643 Patent describes a friction lever shifting device. The device is so designed that when a rider shifts into the next gear, the actuator will slide back by a fixed amount on every shift, thus allowing a fixed amount of fall back, with the stated purpose of the invention being to avoid chain rasp or noise on shifting. Indeed, the movement is described in the body of the patent as follows: "a gap is provided at the connection of the lever body with the rotor [SIC] to make the lever body only freely rotatable . . .". '643 Patent, column 2, lines 15-17. Thus, there is the same amount of "fall back" at every shift which is providing intervention solely as a means to avoid chain rasp upon every manual shift. The rider still must manually accomplish the shift, pulling the chain past the destination sprocket manually. In other words, the rider still has to provide manually the amount of overshift to accomplish the shift; the fall back feature merely helps avoid chain rasp once the rider accomplishes the shift. This is entirely different from the invention of the '291 Patent, in which the cam profile provides the amount of overshift required and lands the chain back on the destination sprocket through the interaction of the cam follower and the cam face. Berto's statement that the '643 Patent provides overshift "to compensate for chain gap variations" is, seen in the best light, inaccurate. The rider manually must account for the fact that the invention merely allows the derailleur to fall back after the rider has

SRAM/AD-II

000013

DD-18246

SR291-002211